

Fishbone - Root Cause Analysis Protocol

Guidance for Coaches and School Teams

(originally developed for VT School Improvement Coaches, August 2012; adapted for the NH Steps to Success process)

The first phase of the ~~Green Mountain Star~~ Steps to Success process -- assessing current practices against indicators of effective school or district practice -- is a form of 'root cause analysis.' It seeks to identify the primary barriers to student success so that the school or district can create a plan that will attack those root causes and reduce or remove impediments to student learning.

Two strategies are commonly used to structure a root cause analysis -- the five whys and a fishbone diagram. (An example of the use of a five whys approach is described in *The School Administrator* from AASA -- <http://www.aasa.org/SchoolAdministratorArticle.aspx?id=10044> and on page 18 of the *Coaching for School Improvement Excerpt*) Both the five whys and fishbone methods ask the user to dig deeply into their current situation to identify the factors contributing to the problem the organization wants to fix.

This guidance document will suggest ways a coach of a school improvement team can use the fishbone method with the ~~Green Mountain Star~~ NH Turnaround Indicators to guide the team toward identification of the primary factors limiting student success -- and then work with the team to develop a plan to address those factors to produce a positive impact on student achievement.

Premises:

Several premises underlie this discussion of root cause analysis:

1. There is no ONE 'root cause' to an educational problem. There are many contributing causes. A candid examination by the team is needed to identify the factors most influential on student learning in their particular setting.
2. Student outcomes are symptoms, not causes. It's circular reasoning to say:
Student performance in math is inadequate because students don't know their math facts.
(taking it further and borrowing from the five whys approach, why don't students know their math facts?)

Calling Dr. House: On TV, Dr. Gregory House leads a team of diagnosticians to probe the causes of illnesses that others cannot decipher. The patient has a fever. Blood tests show elevated white blood count. That means there's an infection. Determining the cause of the infection is the plot of the entire episode (along with interpersonal squabbles and minor romantic diversions.)

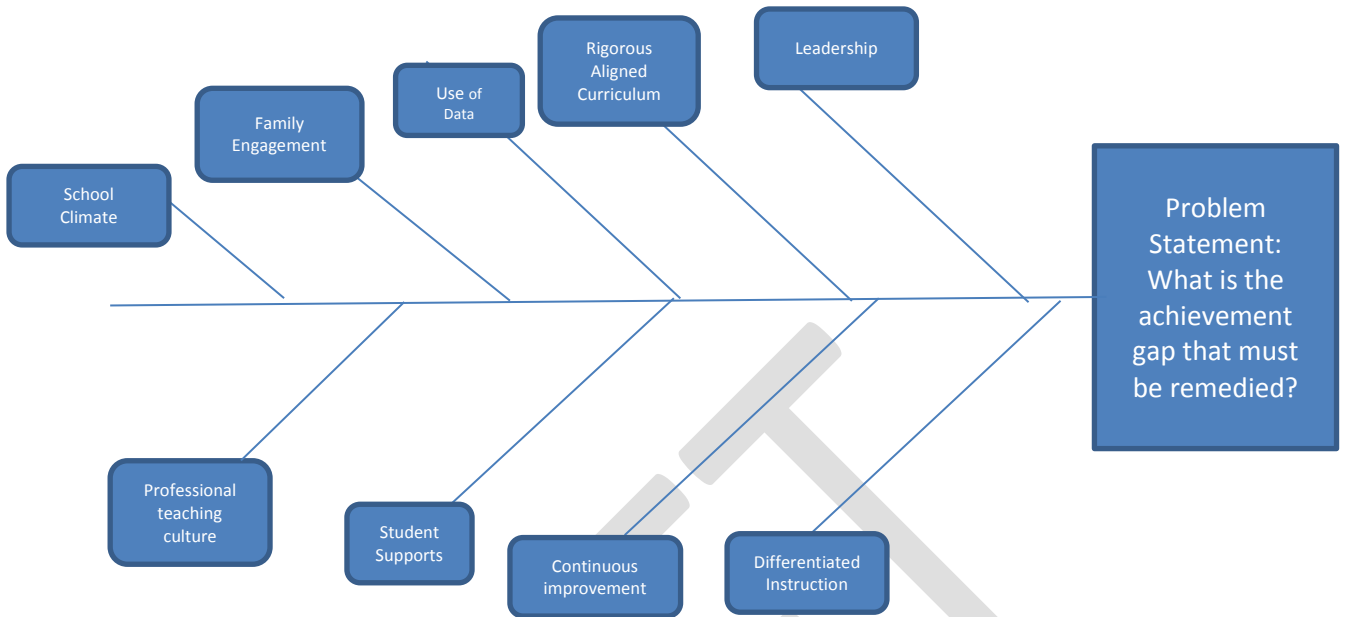
Schools notice gaps in understanding among different students on the state math assessment. What are the factors influencing those gaps? Which factors can be considered causal to the gap? Of the (likely) multiple causal factors, which can be 'treated' to lead to better outcomes?

3. Confusing a learning outcome with its cause leads to blaming the victim. For example:
Students come to school lacking the prerequisite vocabulary to be good readers.
(Don't all students lack some prerequisite knowledge? Isn't that why they come to school?)

4. Correctly linked causes and effects can be crafted into a reasonable “If . . . then . . .” statement:
If lessons are differentiated to address student learning needs, more students will meet their learning targets. *(or in the negative, If lessons are not differentiated to address specific learning needs, students may not achieve expected learning goals.)*
5. Schools are responsible for bringing all forces to bear on the task of educating their students. That means schools have an obligation to build parents’ / families / caregivers’ capacity to help their children succeed.
6. Except in rare instances, root causes are educational practices, not programs. It’s not “response to intervention” *(or Everyday Math, or Common Core Standards)* that causes gaps in student learning, it’s the actions taken (or not) by classroom teachers and school leaders that are contributing causes to student learning outcomes. Persisting with a particular instructional approach when it yields little evidence that students are learning is one example. Considering the “average” or “typical” score to represent every student’s performance instead of disaggregating to explore individual strengths is another instance where the practice, not the program, is a likely cause of unsatisfactory achievement.
6. NECAP is a woefully inadequate measure of change because it lags at least 18 months behind any coordinated intervention effort. Schools MUST have in place (or plan to put in place) measures of the impact of change efforts that are timely, and clearly linked to the desired changes in school practices.

The Fishbone

The fishbone diagram as one representation of the first phase of the ~~Green Mountain Star~~ *Steps to Success* process. (For an example of the use of both the five whys and fishbone in combination, see this research report: <http://www.ctacusa.com/PDFs/Rpt-SBSGuide-2007.pdf>) The fishbone diagram can be used in both root cause analysis as well as problem solution. It’s presented here as a strategy for identifying the most likely root causes of critical educational problems.



Identifying the “root cause” – of *WHAT?* Defining the Problem

The statement of the problem is the starting point of any root cause analysis: what is the condition, situation, issue, barrier, impediment, challenge that the school must address to meet its obligation to its community and to prepare its students to be contributing citizens?

In education, the focus of attention is on student learning. What learning targets are not being met? By which students?

In the current accountability culture, state education agencies are charged with identifying schools not meeting targets (AYP) in math or reading and detailing which student groups are farthest from their goal.

But problem statements based on the limited information reported by state accountability systems are sadly lacking in useful detail:

Spring Lake did not make AYP in mathematics.

North River students did not meet the minimum graduation rate target.

Fourth grade students at Spring Lake identified as economically disadvantaged met their reading targets.

Sixth graders at Spring Lake who are on an IEP failed to meet both math and reading targets for their grade.

For a number of years schools have invested heavily in becoming “data focused”, gathering multiple forms of evidence to identify the specific areas of strength and weakness in student learning. Problem statements building on the school’s data are more nuanced and speak more explicitly to specific learning goals that are not being met.